PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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APPEAL BRIEF

Dear Sir or Madam:

This Appeal Brief is being submitted in support of an Appeal from the Final Rejection mailed February 5, 2008, in connection with the above-identified patent application. Enclosed is a fee in the amount of $510.00 for filing the Appeal Brief.

A Notice of Appeal was received in the Patent Office on July 10, 2008. It is respectfully submitted that this Appeal Brief is timely filed within two months from actual receipt of the Notice of Appeal by the U.S. Patent and Trademark Office.

If any extension period is required in order for this paper to be timely filed, then Applicants hereby request an extension for such additional time period and authorize the appropriate fee(s) therefore to be charged to the Kagan Binder Deposit Account No. 50-1775 and notify us of the same.

It is believed that no other fee(s) are required in filing this paper. However, if any other fee(s) are required, then Applicants hereby authorize such fee(s) therefore to be charged to the Kagan Binder Deposit Account No. 50-1775 and notify us of the same.

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I. Real Party in Interest

Medtronic, Inc. is the real party in interest.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1-14, 16-20, and 32-42 are pending. Claims 21-31 have been canceled. Claim 15 has been withdrawn. Claims 1-14, 16-20 and 32-42 stand rejected. Claims 1-14, 16-20 and 32-42 are on appeal.

IV. Status of Amendments

No claim amendments have been submitted subsequent to the Final Office Action dated February 5, 2008. A Request for Reconsideration After Final was filed on May 5, 2008, and was considered by the Examiner, and determined not to place the application in condition for allowance.

V. Summary of Claimed Subject Matter

Note: the parenthetical citations below refer to the Applicants' specification and figures.

The specifically claimed subject matter of independent claims 1 and 32 is supported and described in the subject application as follows:

1. A method for joining a blood conduit having a lumen, distal region, and proximal region, to a blood vessel (p. 4, lines 5-6) having a wall, in a patient, the method comprising:

making an incision in the blood vessel wall (p. 4, lines 6-7);

inserting a tubular member having a distal region and a proximal region into the conduit (p. 4, lines 6-7, 11-14; p. 9, lines 8-9; Fig. 5C);

advancing the tubular member distal region into the blood vessel through the incision (p. 4, lines 11-14; Figs. 5E, 6);

fixedly joining the conduit distal region to the vessel wall near the incision while providing an oxygenated liquid flow through the tubular member disposed within the conduit and into the blood vessel (p. 4, lines 9-11; p. 9, lines 18-19; Figs 5E, 5F, 6); and

after fixedly joining the conduit to the vessel, withdrawing the tubular member through the conduit (p. 14, lines 12-13, 18-22; p. 15, lines 15-16).

32. A method for joining a blood conduit having a lumen, a distal region, and a proximal region, to a blood vessel (p. 4, lines 5-6) having a lumen, a proximal end, and a wall, in a patient, the method comprising:

inserting a tubular member having a distal region and a proximal region into the conduit (p. 4, lines 6-7, 11-14; p. 9, lines 8-9; Fig. 5C);

advancing the tubular member distal region into the blood vessel lumen through the blood vessel proximal end (p. 4, lines 11-14; Figs. 5E, 6);

fixedly joining the conduit distal region to the vessel wall near the blood vessel proximal end while providing an oxygenated liquid flow through the tubular member

disposed within the conduit and into the blood vessel (p. 4, lines 9-11; p. 9, lines 18-19; Figs 5E, 5F, 6); and

after fixedly joining the conduit to the vessel, withdrawing the tubular member through the conduit (p. 14, lines 12-13, 18-22; p. 15, lines 15-16).

The presently claimed invention addresses a need in the area of anastomosis, and provides a method for perfusing coronary arteries during an entire anastomosis procedure, in order to prevent ischemia (p. 3, lines 20-21). The method allows the anastomosis to be completely formed between a conduit and a coronary artery (p. 3, lines 21-22). The method allows for a reduction in blood flow into the surgical field from the anastomosis site, which can interfere with a surgeon's vision and the procedure itself (p. 2, lines 12-13; p. 3, line 22 – p. 4, line 1).

One aspect of the presently claimed invention is directed to a method for joining a blood conduit having a lumen, distal region, and proximal region, to a blood vessel (p. 4, lines 5-6) having a wall. The method comprises a step of making an incision in the blood vessel wall (p. 4, lines 6-7, 11-14; Fig. 5C). Another step is the step of inserting a tubular member having a distal region and a proximal region into the conduit (p. 4, lines 6-7, 11-14; p. 9, lines 8-9). The inserting step may be performed before or after the advancing (p. 4, lines 11-14). Yet another step is that of advancing the tubular member distal region into the blood vessel through the incision (p. 4, lines 11-14; Figs. 5E, 6). A further step is that of fixedly joining the conduit distal region to the vessel wall near the incision while providing an oxygenated liquid flow through the tubular member disposed within the conduit and into the blood vessel (p. 4, lines 9-11; p. 9, lines 18-19; Figs 5E, 5F, 6). After fixedly joining the conduit to the vessel, the method includes a step of withdrawing the tubular member through the conduit (p. 14, lines 12-13, 18-22; p. 15, lines 15-16). The fixedly joining step may include suturing the conduit to the blood vessel (p. 4, lines 14-15).

The blood vessel may be a coronary artery, the conduit may be a saphenous vein, and the fixedly joining may include fixedly joining the saphenous vein to the coronary artery (p. 4, lines 16-18). Alternatively, the blood vessel may be a coronary artery, the

conduit may be an internal mammary artery, and the fixedly joining may include fixedly joining the internal mammary artery to the coronary artery (p. 4, lines 18-21).

The oxygenated fluid may include blood (p. 4, line 21) or a non-blood oxygenated carrying substance (p. 14, lines 4-6). The oxygenated fluid may include blood supplied from the patient's femoral artery (p. 5, line 13; p. 14, lines 3-4) or the patient's aorta (p. 5, line 12). The oxygenated fluid may be provided at a pressure higher than the patient's blood pressure (p. 4, lines 21-22; p. 15, lines 17-18; p. 16, lines 13-14). Such a pressure may be provided by a bulb, or through a port into the tubular member that is distinct from the proximal end (p. 5, line 1; p. 15, line 20; Fig. 8).

The method may further comprise a step of expanding the tubular member distal region radially outward within the blood vessel (p. 5, lines 3-7; p. 13, lines 13-16; Fig. 5E). The tubular member distal region may include a flow restrictor and a weakened wall region proximal of the flow restrictor, wherein the expanding step may include forcing the oxygenated fluid under pressure through the tubular member to expand the weakened distal region (p. 5, lines 7-9).

The method may further comprise retracting the tubular member within the conduit and further provide the oxygenated fluid through the tubular member to the conduit proximal region (p. 6, lines 14-16).

The method may further comprise inserting a stiffening member within the tubular member, which may be prior to inserting the tubular member into the conduit (Fig. 5A; p. 12, lines 6-7). The advancing the tubular member into the blood vessel may be performed while the stiffening member is inside the tubular member (p. 12, lines 9-11).

The presently claimed method may alternatively be directed to a method for joining a blood conduit having a lumen, a distal region, and a proximal region, to a blood vessel (p. 4, lines 5-6) having a lumen, a proximal end, and a wall. The method comprising a step of inserting a tubular member having a distal region and a proximal region into the conduit (p. 4, lines 6-7, 11-14; Fig. 5C). Another step is the step of advancing the tubular member distal region into the blood vessel lumen through the blood vessel proximal end (p. 4, lines 11-14; Figs. 5E, 6). A further step is that of fixedly joining the conduit distal region to the vessel wall near the blood vessel proximal end

while providing an oxygenated liquid flow through the tubular member disposed within the conduit and into the blood vessel (p. 4, lines 9-11; p. 9, lines 18-19; Figs 5E, 5F, 6). And, after fixedly joining the conduit to the vessel, a step of withdrawing the tubular member through the conduit (p. 14, lines 12-13, 18-22; p. 15, lines 15-16).

VI. Grounds of Rejection to be Reviewed on Appeal

Whether claims 1-3, 5-7, 9-13, 32-34, 36-38, 40 and 41 are patentable under 35 U.S.C. 103(a) over Duhaylongsod et al.

Whether claims 4 and 35 are patentable under 35 U.S.C. 103(a) over Duhaylongsod et al. in view of Stanish.

Whether claims 8, 14, 16-20, 39 and 42 are patentable over Duhaylongsod et al. in view of Amor et al.

VII. Argument

Rejection of claims 1-3, 5-7, 9-13, 32-34, 36-38, 40 and 41 under 35 U.S.C. 103(a) over Duhaylongsod et al.

Claims 1-3, 5-7, 9-13, 32-34, 36-38, 40 and 41

In rejecting claims 1-3, 5-7, 9-13, 32-34, 36-38, 40 and 41 under 35 U.S.C. 103(a) as being unpatentable over Duhaylongsod et al., the Examiner attempts to combine two separate and distinct embodiments (one from Figures 5-8 and the second from Figures 18-20) from the reference. The two embodiments are different for two reasons: one, the embodiments use different physical approaches; and two, the embodiments are used for different reasons. In particular, the physical approach of the catheter in one embodiment is from outside the vessel, and from the second embodiment is intravascular. The reason for using the catheter in the first embodiment is to expand a fastener provided within the vessel by way of an opening cut through the vessel wall, and the reason in the second embodiment is to provide blood flow downstream in an intentionally occluded vessel.

Applicants assert that it does not make sense to combine the two separate embodiments of Duhaylongsod et al. in such a way as presented by the Examiner. The two embodiments are different because they include two different approaches and also are used for two different reasons.

In the embodiment shown in Figures 5-8, a fastener 10 with a graft vessel 12 attached, is radially compressed for insertion within a slit in a side wall of a vessel (col. 7, lines 17-21, 25-26). A balloon catheter 80 is then inserted through the vessel 12 and fastener 10 in order to expand the fastener for engagement against the inner wall of the vessel (col. 7, lines 21-25). Therefore, the physical approach of the catheter 80 is from outside the vessel and in through a slit or incision in the vessel. The reason for using the catheter 80 is to expand the fastener 10 to fit against the inner wall of the vessel. Blood flow in the vessel is not occluded by the catheter 80 or fastener 10.

In the distinct embodiment shown in Figures 18-20, a fastener 50 formed of an elongated member 60 attached to a graft vessel 12, is provided (col. 8, lines 6-8). In order to deliver the fastener 50, an opening 18 is made in a vessel and a catheter 90 is advanced intravascularly to extend out of the opening 18 (col. 8, lines 28-32). The

catheter 90 is then inserted into the fastener 50, and the fastener 50 and catheter 90 are inserted through the opening 18 to deliver the fastener 50 to the vessel (col. 8, lines 33-36). The catheter 90 includes three balloons 92, 94, 96, with balloon 92 being provided to occlude blood flow through the vessel and the other two balloons 94, 96 being provided to expand the end portions 56 of fastener 50 to secure the fastener 50 in place in the vessel (col. 8, lines 19-22, 44-47). Blood is supplied through catheter 90 and in particular though openings 98 located on the end of catheter 90 and downstream from the anastomosis site (col. 8, lines 23-27). Therefore, the physical approach of the catheter 90 is intravascular. The reason for using the catheter 90 is to supply blood to the vessel downstream from the anastomosis site because the balloon 92 on the catheter 90 completely occludes blood flow through the vessel.

The Examiner attempted to combine the two embodiments by providing that the first embodiment disclosed the steps of: making an incision 18 in the blood vessel wall, inserting a tubular member 80 into a conduit 26, 12, advancing the tubular member through the incision located on a proximal end thereof, fixedly joining the conduit to the vessel wall, and after fixedly joining the conduit to the vessel, withdrawing the tubular member through the conduit. The Examiner also provided that the embodiment shown in Figures 18-20 disclosed the step of providing oxygenated liquid flow through a tubular member and into the blood vessel while fixedly joining the conduit. The Examiner asserted that it would have been obvious to utilize the tubular member and conduit from the embodiment of Figures 18-20 in the embodiment of Figures 5-8 in order to provide blood through the tubular member and into the vessel during an anastomosis procedure.

It does not make sense to combine the embodiment of Figures 18-20 with that of Figures 5-8. In the embodiment of Figures 5-8, blood is flowing through the vessel. There is no complete occlusion. The tubular member 80 is provided to expand the fastener 50. The tubular member 80 does not need to supply blood. In the embodiment of Figures 18-20, on the other hand, the catheter 90 is advanced through the vessel intravascularly and the balloons 92, 94, 96 occlude the vessel. The purpose of the balloon 92 in particular is to occlude or block the flow of blood at the location of the anastomosis site. There are multiple balloons that occlude blood flow. In that case, the delivery of blood downstream from the anastomosis site through openings 98 in the

catheter 90 is desired to provide some blood flow downstream. In the embodiment of Figures 5-8, blood flow is already present as permitted through the vessel, and there is no disclosure of any reason why any additional supply would be useful or desired.

Additionally, if the catheter 90 of the embodiment of Figures 18-20 were used in the embodiment in Figures 5-8 in place of catheter 80, the catheter would have to be inserted from outside the vessel at the anastomosis site itself. Thus, it would not be possible for balloons on the catheter to be located upstream from the anastomosis site for the purpose of occlusion of the vessel at the anastomosis site, while the openings would be downstream to supply blood downstream from the occlusion.

Therefore, the two embodiments of Duhaylongsod et al. are not properly combinable, as presented by the Examiner. However, regardless of whether or not the two embodiments are properly combinable, the fact is that the two embodiments of Duhaylongsod et al. are completely different, and are provided using two different approaches and for two different reasons. The embodiment of Figures 18-20 delivers the catheter 90 intravascularly, which occludes the flow of blood through the vessel , necessitating the delivery of blood flow downstream from the anastomosis site through the catheter 90. In the embodiment of Figures 5-8, the catheter 80 is delivered from outside the vessel through an opening. Blood flow is maintained through the vessel while the fastener 50 is delivered.

Claim 1

As discussed above, the two separate embodiments of Duhaylongsod et al. are not properly combinable to result in all elements of claim 1 being disclosed, taught or suggested in the reference in order to render claim 1 unpatentable under 35 U.S.C. 103. Accordingly, it is submitted that the Duhaylongsod et al. reference does not render claim 1 obvious. Claim 1 is patentably distinct from Duhaylongsod et al. Thus, reversal of the rejection of record with respect to claim 1 is believed proper and respectfully requested.

Claims 2-3, 5-7, and 9-13

Independent claim 1 is patentably distinct from Duhaylongsod et al. for the reasons discussed above. Claims 2-3, 5-7, and 9-13 are dependent upon claim 1 and add further limitations to claim 1, and thus further add to the distinctness of the claimed

invention. Reversal of the rejection of record with respect to claims 2-3, 5-7 and 9-13 is therefore also respectfully requested.

Claim 32

Regarding independent claim 32, it is submitted that similar distinguishing aspects as in claim 1 are claimed over the Duhaylongsod et al. reference. Also, claim 32 recites a method of joining a blood conduit and a blood vessel, where a distal region of the conduit is fixedly joined to the blood vessel proximal end. This procedure is further distinct from the technique of the Duhaylongsod et al. reference, which does not disclose a graft connection to or near an end of any blood vessel. So, in addition to distinguishing on a similar basis as claim 1, claim 32 is further patentably distinct on the type of joining that is created according to the claim steps. Thus, reversal of the rejection of record with respect to claim 32 is believed proper and respectfully requested.

Claims 33-34, 36-38, 40 and 41

Independent claim 32 is patentably distinct from Duhaylongsod et al. for the reasons discussed above. Claims 33-34, 36-38, 40 and 41 are dependent upon claim 32 and add further limitations to claim 32, and thus further add to the distinctness of the claimed invention. Reversal of the rejection of record with respect to claims 33-34, 36-38, 40 and 41 is therefore also respectfully requested.

Rejection of claims 4 and 35 under 35 U.S.C. 103(a) over Duhaylongsod et al. in view of Stanish.

Claims 4 and 35

Claims 4 and 35 are dependent upon claims 1 and 32, respectively. Therefore, based upon the discussion above, claims 4 and 35 are similarly not rendered obvious by Duhaylongsod et al. Claims 4 and 35 are rejected as being unpatentable over Duhaylongsod et al. in view of Stanish. However, Stanish does not remedy any deficiencies of Duhaylongsod et al. in order to render claims 4 and 35 unpatentable.

In the Final Official Action, with regard to claim 4 and 35, the Examiner provided that Duhaylongsod et al. failed to disclose fixedly joining, including suturing, the conduit to the blood vessel, and further provided that such suturing was disclosed by Stanish.

Stanish discloses suturing of a graft to a vein, but the reference is not properly combinable with Duhaylongsod et al.

In Duhaylongsod et al., suturing of the conduit 26, 12 is not necessary or desired. For example, in the embodiment of Figures 5-8, the graft vessel 12 or conduit is attached to a fastener 10 that is expanded using a balloon catheter 80 in order to seal the graft vessel 12 to the artery. There is no need for sutures in that embodiment. In the embodiment of Figures 18-20, for another example, the conduit is attached or sutured to a fastener 50 that is joined to the blood vessel when balloons on catheter 90 are inflated and expand the ends of the fastener 50 to press against the inside of the blood vessel wall. There is also no need for sutures in that embodiment. Duhaylongsod et al. actually teaches away from using sutures to join a conduit to a blood vessel, and teaches the use of expandable fasteners instead. The specification of Duhaylongsod et al. even provides that an aspect of the invention is to allow two vessels to be "sealingly secured to one another without the need for sutures" (col. 1, lines 52-54).

Accordingly, it is submitted that the Duhaylongsod et al. in view of Stanish do not render claims 4 and 35 obvious. Reversal of the rejection of record with respect to claims 4 and 35 is therefore also respectfully requested.

Rejection of claims 8, 14, 16-20, 39 and 42 over Duhaylongsod et al. in view of Amor et al.

Claims 8, 14, 16-20, 39 and 42

Claims 8, 14, 16-20, 39 and 42 are dependent upon independent claims 1 and 32. Therefore, based upon the discussion above, these claims are similarly not rendered obvious by Duhaylongsod et al. Claims 8, 14, 16-20, 39 and 42 are rejected as being unpatentable over Duhaylongsod et al. in view of Amor et al. Amor et al., however, does not remedy any deficiencies of Duhaylongsod et al. in order to render claim 8, 14, 16-20, 39 and 42 unpatentable.

In the final Official Action, the Examiner provided that Duhaylongsod et al. failed to disclose "inserting a stiffening member within the tubular member and wherein the expanding includes forcing the oxygenated fluid under pressure through the tubular member to expand the weakened distal region and into the blood vessel."

Amor et al. discloses a device used to implant or deliver stents to arteries. The device includes a stent pusher portion 2 comprising a microcatheter 4 with a guidewire 6 extending through a lumen 5 in the microcatheter 4. The device also includes a stent loading cavity 7 able to retain a stent 7, which is self-expanding. The distal end 9 of the device includes an atraumatic tip 10 which is prolonged by a tip balloon part 11 comprising an inflatable occlusive balloon 12 and a fluid releasing section 13. When the device is inserted into a body, the tip balloon part 11 leads the device. The shape of the tip balloon part 11, when the balloon 12 is deflated, is able to be changed to fit through the vascular system by advancement of the guidewire 6 more or less into the tip balloon part 11. The balloon 12 can be inflated to hermetically close the vessel upstream with respect to the stenosis to be cured. The fluid-releasing section 13 on the proximal face of the balloon 12, or just there behind, provides a flushing action upstream from the stent 7 placement in order to clean the vasculature. The fluid used for flushing is described as a physically acceptable fluid. The flushing action begins when the balloon 12 pressure reaches a given value, thus activating a controlled leak via the fluid-releasing section 13.

Amor et al. is not properly combinable with Duhaylongsod et al. For example, in Duhaylongsod et al., an anastomosis procedure is described, not an angioplasty procedure, as in Amor et al. In the anastomosis procedure of Duhaylongsod et al., for the embodiment shown in Figures 5-8, a blood conduit 12 is fastened into the blood vessel 14 using a fastener in order to bypass the stenosis 74 or blockage. Therefore, if a fluid was provided through the conduit 12 it would not be able to flush the blockage area because that area is bypassed. Regarding the embodiment in Figures 18-20 of Duhaylongsod et al., the conduit 12 is attached to the fastener 50 that is placed in a blood vessel 14, which does not even contain a blockage. Thus, there is no need to flush with a fluid in the embodiments shown in Duhaylongsod et al. Therefore, the Amor et al. and Duhaylongsod et al. references are not properly combinable.

Even if the two references were properly combinable, Amor et al. does not remedy the deficiencies of Duhaylongsod et al. For example, Amor et al. does not even disclose using an oxygenated fluid. In addition, there is no flow restrictor or bulb addressed by the two references, as in claims 8, 16 and 39 of the present invention. Therefore, claims 8, 14, 16-20, 39 and 42 are not unpatentable. Accordingly, reversal of

the rejection of record with respect to claims 8, 14, 16-20, 39 and 42 is respectfully requested.

Conclusion

Applicants respectfully request that the rejections of claims 1-14 and 16-20, and 32-42 be reversed.

Respectfully Submitted,

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Dated: September 10, 2008

#47180

VIII. Appendix – Claims on Appeal

1. A method for joining a blood conduit having a lumen, distal region, and proximal region, to a blood vessel having a wall, in a patient, the method comprising:

making an incision in the blood vessel wall;

inserting a tubular member having a distal region and a proximal region into the conduit;

advancing the tubular member distal region into the blood vessel through the incision;

fixedly joining the conduit distal region to the vessel wall near the incision while providing an oxygenated liquid flow through the tubular member disposed within the conduit and into the blood vessel; and

after fixedly joining the conduit to the vessel, withdrawing the tubular member through the conduit.

2. The method of claim 1, in which the inserting is performed before the advancing.

3. The method of claim 1, in which the inserting is performed after the advancing.

4. The method of claim 1, in which the fixedly joining includes suturing the conduit to the blood vessel.

5. The method of claim 1, in which the blood vessel is a coronary artery, the conduit is a saphenous vein, and in which the fixedly joining includes fixedly joining the saphenous vein to the coronary artery.

6. The method of claim 1, in which the blood vessel is a coronary artery, the conduit is an internal mammary artery, and in which the fixedly joining includes fixedly joining the internal mammary artery to the coronary artery.

7. The method of claim 1, further comprising expanding the tubular member distal region radially outward within the blood vessel.

8. The method of claim 7, in which the tubular member distal region includes a flow restrictor and a weakened wall region proximal of the flow restrictor, wherein the expanding includes forcing the oxygenated fluid under pressure through the tubular member to expand the weakened distal region.

9. The method of claim 1, in which oxygenated fluid includes blood.

10. The method of claim 1, in which the oxygenated fluid includes a non-blood oxygenated carrying substance.

11. The method of claim 1, in which the oxygenated fluid includes blood supplied from the patient's femoral artery.

12. The method of claim 1, in which the oxygenated fluid includes blood supplied from the patient's aorta.

13. The method of claim 1, further comprising retracting the tubular member within the conduit and further providing the oxygenated fluid through the tubular member to the conduit proximal region.

14. The method of claim 1, wherein the patient has a blood pressure, wherein the oxygenated fluid is provided at a pressure higher than the patient's blood pressure.

15. (Withdrawn)

16. The method of claim 14, in which the oxygenated fluid pressure is provided by a bulb.

17. The method of claim 16, in which the fluid pressure is provided through a port into the tubular member that is distinct from the proximal end.

18. The method of claim 1, further comprising inserting a stiffening member within the tubular member prior to inserting the tubular member into the conduit.

19. The method of claim 1, further comprising inserting a stiffening member into the tubular member.

20. The method of claim 19, wherein the advancing the tubular member into the blood vessel is performed while the stiffening member is inside the tubular member.

Claims 21-31 (Canceled).

32. A method for joining a blood conduit having a lumen, a distal region, and a proximal region, to a blood vessel having a lumen, a proximal end, and a wall, in a patient, the method comprising:

inserting a tubular member having a distal region and a proximal region into the conduit;

advancing the tubular member distal region into the blood vessel lumen through the blood vessel proximal end;

fixedly joining the conduit distal region to the vessel wall near the blood vessel proximal end while providing an oxygenated liquid flow through the tubular member disposed within the conduit and into the blood vessel; and

after fixedly joining the conduit to the vessel, withdrawing the tubular member through the conduit.

33. The method of claim 32, in which the inserting is performed before the advancing.

34. The method of claim 32, in which the inserting is performed after the advancing.

35. The method of claim 32, in which the fixedly joining includes suturing the conduit to the blood vessel.

36. The method of claim 32, in which the blood vessel is a coronary artery, the conduit is a saphenous vein, and in which the fixedly joining includes fixedly joining the saphenous vein to the coronary artery.

37. The method of claim 32, in which the blood vessel is a coronary artery, the conduit is an internal mammary artery, and in which the fixedly joining includes fixedly joining the internal mammary artery to the coronary artery.

38. The method of claim 32, further comprising expanding the tubular member distal region radially outward within the blood vessel.

39. The method of claim 38, in which the tubular member distal region includes a flow restrictor and a weakened wall region proximal of the flow restrictor, wherein the expanding includes forcing the oxygenated fluid under pressure through the tubular member to expand the weakened distal region.

40. The method of claim 32, in which the oxygenated fluid includes blood supplied from the patient's femoral artery.

41. The method of claim 32, in which the oxygenated fluid includes blood supplied from the patient's aorta.

42. The method of claim 32, wherein the patient has a blood pressure, wherein the oxygenated fluid is provided at a pressure higher than the patient's blood pressure.

IX. Appendix - Evidence

There is no evidence to be included in Appendix IX.

X. Appendix - Related Proceedings

There are no related appeals or interferences.